UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,728	11/06/2001	Mohammad A. Abdallah	42390P5943C	2359

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EXAMINER
ELLIS, RICHARD L

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _22 January 2004_.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _16-44_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _16-44_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _6_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1.   Claims 16-44 remain for examination.

2.   Claims 17, 21-24, and 26-38 are rejected under 35 USC § 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

3.   Claims 16-20, 25-32, 35-42 are rejected under 35 USC § 103 as being unpatentable

over Sidwell, U.S. Patent 5,859,789, in view of *Visual Instruction Set (VIS (TM)) User's*

Guide, Sun Microsystems, March 1997 ("Sun").

4.   Claims 21-24, 33-34, and 43-44 are rejected under 35 USC § 103 as being unpatentable

over Sidwell, U.S. patent 5,859,789, in view of Sun, *Visual Instruction Set (VIS (TM)) User's*

Guide, Sun Microsystems, March 1997, and further in view of Lee, U.S. Patent 5,721,697.

         Sidwell, Sun, and Lee were cited as a prior art reference in paper number 5, mailed

August 19, 2003.

5.   The rejections are respectfully maintained and incorporated by reference as set forth in

the last office action, paper number 5, mailed August 19, 2003.

6.   Applicant's arguments filed January 22, 2004, paper number 7, have been fully

considered but they are not deemed to be persuasive.

7.   In the remarks, applicant argues in substance:

7.1.   That: "The presence of a trademark or trade name in a claim is not, per se, improper
        under 35 USC § 112, second paragraph, ... Applicant therefore submits that Claims 17
        and 26 set out and circumscribe subject matter with a sufficient degree of precision and
        particularity to apprise one of skill in the art of each claim's respective scope."

        This is not found persuasive because applicant's analysis of why use of the trademark

PENTIUM in the claim fails to follow the requirements of MPEP § 2173.05(u) and §

608.01(v). In MPEP § 2173.05(u) it is stated the following:

                "It is important to recognize that a trademark or trade name is used to identify a source
                of goods, and not the goods themselves. Thus a trademark or trade name does not
                identify or describe the goods associated with the trademark or trade name."

        This statement from the MPEP quoted above should be kept in mind when analyzing a

claim containing a trademark, namely that the trademark itself <u>does **not**</u> identify any **particular**

goods, but merely the source of those same goods. So in this case, the trademark

"PENTIUM" in the claim merely identifies the claim as containing a system which comes from

the Intel Corporation. But does not identify any particular good (i.e., any particular processor)

with specificity. Additionally, there have now been at least 10 different CPU's produced by

the Intel Corporation which carry the trademark PENTIUM. Namely the original PENTIUM,

the PENTIUM MMX, the PENTIUM PRO, the PENTIUM-II, the PENTIUM-III, the

PENTIUM-4, the PENTIUM-II Xeon, the PENTIUM-4 Xeon, the PENTIUM-II Celeron, and

the PENTIUM-4 Celeron. Many of these different chips which carry the trademark

PENTIUM (which as outlined above merely indicates that the source of the processor is the

Intel Corporation) also include different instruction sets.

Next we find this paragraph in MPEP § 2173.05(u):

"If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product."

In the present case, applicant is quite clearly attempting to use the trademark

PENTIUM to identify a particular material or product because applicant is attempting to limit

the claim to applying to a "PENTIUM" instruction set. But as clearly stated in the MPEP, the

trademark PENTIUM does not identify a particular material or product, but merely that it is

produced by the Intel Corporation, and therefore the claim scope is uncertain because as stated

in the MPEP, a "trademark or trade name cannot be used properly to identify any particular

material or product." Additionally, as shown above at least ten different Intel Corporation

CPU's carry the trademark PENTIUM, and most if not all of them have different instruction

sets that they execute. Therefore, it is impossible "to identify which particular material or

product" (i.e., which specific instruction set) to which applicant is intending to limit the

claims. Therefore the claims are indefinite.

Next we find this text in MPEP 2173.05(u):

"In fact, the value of a trademark would be lost to the extent that it became descriptive of a product, rather than used as an identification of a source or origin of a product. Thus, the use of a trademark or trade name in a claim to identify or describe a material or product would not only render a claim indefinite, but would also constitute an improper use of the trademark or trade name."

Accordingly, because as seen above, applicant is attempting to use the trademark PENTIUM to identify a particular product instead of a source of a product, applicant's use is not only indefinite within the scope of 35 USC § 112, 2nd, but is also an improper use of that same said trademark by applicant. Such improper use of the Intel Corporations trademark by applicant could leave applicant open to litigation from the Intel Corporation for improper use of the Intel Corporation's trademark PENTIUM.

Therefore, as seen above, applicant's use of the trademark PENTIUM in the claims most definitely renders the claim indefinite, and as well, could leave applicant open to potential legal liability for misuse of the Intel Corporations trademark. Accordingly, the rejection of the claims as indefinite for use of a trademark is proper and is maintained.

7.2.   That: "Applicant ... believes ... [that] Claims 21 and 33 ... define[s] subject matter of the claims with a reasonable degree of precision and particularity in accordance with MPEP § 2106."

This is not found persuasive because applicant has apparently completely missed the point for the rejection of claims 21 and 33. Applicant should note this text from claim 16 (the claim from which claim 21 depends):

"said decode unit to initiate a <u>first</u> <u>set</u> of operations on the first set of packed data <u>responsive</u> <u>to</u> <u>deciding</u> <u>the</u> <u>**PSAD**</u> <u>instruction</u>" (clam 16, emphasis added)

where the claim defines the PSAD instruction like so:

"including a <u>packed</u> <u>sum</u> <u>of</u> <u>absolute</u> <u>differences</u> <u>**(PSAD)**</u> instruction" (claim 16, emphasis added)

Based on these two example portions of claim 16, claim 16 has very clearly defined the "first set of operations" to be the result of decoding a PSAD instruction, and that a PSAD instruction is "a packed sum of absolute differences". Now, applicant's attention is drawn to the relevant language of claim 21:

"21. The processor of claim 16, wherein performing the first operation causes the execution unit to:
produce a first plurality of partial products in a multiplier ..."

Given that the definition of a "product" is a result of a multiplication operation, and that claim 21 states that the "products" are produced in a "multiplier", claim 21 is indicating that "the first operation" (referring to "a first set of operations" from claim 16) is a multiplication operation. Yet, as was clearly set forth above, claim 16 clearly defines "the first set of operations" as "packed sum of absolute differences", which as an operation would contain only additions and subtractions, not multiplication. The confusion arises because the second half of claim 16 (not quoted) does indeed set forth a "second operation" which is defined as being a packed multiply-add (which would include multiplication as an operation). So we have the situation where claim 16 states:

1) first operation: packed sum of absolute differences (only addition and subtraction)

2) second operation: packed multiply-add (multiplication and addition)

while claim 21 states:

1) first operation: multiplication operations.

The lack of clarity arises because suddenly, and without warning, the first operation which was only addition and subtraction in claim 16 is now defined in claim 20 as multiplication. It is not clear if applicant intends to reference the first operation from claim 16, in which case multiplication is not one of the possible operations, or really intended to reference the second operation from claim 16, which does include multiplication. Given that claim 21 is eleven lines long, and only one of those eleven lines indicates "first operation" and the remaining ten lines all relate to multiplication, the preponderance of the evidence points to the fact that applicant made a simply typographical error in claim 21 and intended to say "second operation" instead of "first operation". The same analysis as above applies equally to claim 33.

7.3.   That: "the vis_pdist() instruction of Sun has three source operands, one of which is also a destination ... Sidwell's system provides no path for an accumulator input to packed

arithmetic unit 6, for example, from result bus 56 or as a third source operand to
packed arithmetic unit 6 ... Therefore Sidwell's system could not perform Sun's packed
sum of absolute differences without modifications, for example, to control unit 16 and
packed arithmetic unit 6 to permit a third source operand for packed arithmetic
instruction."

"The PENTIUM microprocessor instruction set has a well known opcode format,
which permits two operands, one of the operands acting both as a source operand and a
destination operand, one of the operands acting both as a source operand and a
destination operand. As discussed above, the vis_pdist() instruction of Sun has three
source operands, one of which is also a destination ... Therefore a sum of absolute
differences instruction with a two operand opcode format would not perform the
operation defined by the vis_pdist() instruction of Sun without modification"

This is not found persuasive because applicant is arguing that the teaching of Sun can

not be bodily incorporated into Sidwell's system, which is improper.

"The test for obviousness is not whether the features of a secondary reference may be
bodily incorporated into the structure of the primary reference.... Rather, the test is
what the combined teachings of those references would have suggested to those of
ordinary skill in the art." In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA
1981). See also In re Sneed, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir.
1983) ("[I]t is not necessary that the inventions of the references be physically
combinable to render obvious the invention under review."); and In re Nievelt, 482
F.2d 965, 179 USPQ 224, 226 (CCPA 1973) ("Combining the teachings of references
does not involve an ability to combine their specific structures.").

Accordingly, the mere fact that Sun and Sidwell do not simply plug together without any

modification does not in any way reflect the obviousness of the combination of references.

Additionally, applicant's own arguments provide evidence of the obviousness of making the

combination when applicant states:

"Therefore Sidwell's system could not perform Sun's packed sum of absolute
differences without modifications, for example, to control unit 16 and packed arithmetic
unit 6 to permit a third source operand for packed arithmetic instruction."

Applicant has quite succinctly identified the small modification necessary to make the teachings

compatible, and as such, has provided evidence of just how obvious it is to make the

combination.

As to applicant's argument regarding the PENTIUM instruction set having only a two

operand format, applicant is reminded that there are many PENTIUM instructions that while

having only two programmer specified operands, make use of one or more additional implicit

operands, and so, as a result, that instruction is effectively a three or more operand instruction.

One such example is certain forms of the IMUL instruction.

7.4.   That: "Sun does not discuss or suggest the writing of any carry state as part of a subtraction operation or the reading of any carry state as part of an absolute value operation"

This is not found persuasive because it is inherent within a subtract operation that a

carry is created (properly termed a "borrow"). This is simple elementary mathematics. It is

also inherent that carries generated from a subtraction would be used in performing an absolute

value because the presence/absence of a carry indicates the sign of the result, indicating

whether the result is already positive, or needs to have it's sign inverted, in order to perform

the absolute value. Therefore, both aspects are simply the elementary definition of the

mathematical operators applicant is claiming, and as a result, would inherently have been

present in Sun's system.

7.5.   That: "Further, Sidwell admits that "The execution units 2, 4, 6 do not hold any state between instructions. Thus subsequent instructions are independent." ... Therefore, it would not be obvious for the system of Sidwell to perform the packed subtract and write carry operation, or to perform the packed absolute value and read carry operation as set forth by Claims 18, 30, and 39."

This is not found persuasive because in the first case, applicant is arguing the

references separately when the rejection is based upon a combination, which is improper. (See

In re Keller, 642 F.2d 413, 208 USPQ 817 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091,

231 USPQ 375 (Fed. Cir. 1986). In the second case, the structure that applicant is arguing is

in fact the structure that is inherently implemented in a computing system. The execution units

do not hold state (e.g., carry flag), but rather, that state is held in a separate register often

referred to as the processor status register or processor flags register. In the PENTIUM

architecture, for instance, it's referred to as the processor flags register. So applicant's

argument is without merit because what applicant has identified is merely the standard design

methodology that anyone would use in the environment of the invention.

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR § 1.136(a). The practice of automatically extending the

shortened statutory period an additional month upon the filing of a timely first response to a

final rejection has been discontinued by the Office. See 1021 TMOG 35.

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL
ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION.
IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE
MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT
MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED
STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE
ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE
PURSUANT TO 37 CFR § 1.136(a) WILL BE CALCULATED FROM THE MAILING
DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD
FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS
FINAL ACTION.

9.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to
Richard Ellis whose telephone number is (703) 305-9690. The Examiner can normally be reached on Monday through
Thursday from 7am to 5pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be
reached on (703) 305-9712. The fax phone number for the USPTO is: (703)872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group
receptionist whose telephone number is (703) 305-3900.

Richard Ellis
April 8, 2004   RICHARD L. ELLIS
                                                       PRIMARY EXAMINER